

TECHNICAL REVIEW COMMITTEE MEETING
NAS BRUNSWICK, MAINE

January 11, 1995

ATTENDEES:

<u>NAME</u>	<u>ORGANIZATION</u>	<u>PHONE</u>
J. Caruthers	NASB	
Lcdr. John Edwards	AOIC NAVFAC Contracts	
F. Evans	Northern Division	
J. Dunleavy	Northern Division	
M. Leipert	Northern Division	
B. Lim	USEPA	
L. Kay	USEPA	
N. Beardsley	MEDEP	
M. Hubert	MEDEP	
R. Heath	MEDEP	
S. Mierzykowski	US Fish & Wildlife Service	
S. Weddle	Town of Brunswick/BACSE	
T. Fusco	BACSE	
C. Lepage	BACSE Consultant	
J. Brandow	ABB-ES	
B. McGirr	ABB-ES	
C. Dricot	ABB-ES	

MEETING DATE: January 11, 1995, 8:30 a.m.

MEETING LOCATION: NAS Brunswick

I. INTRODUCTION

The Technical Review Committee (TRC) meeting was opened by Fred Evans of Northern Division. Jeff Brandow was introduced to the TRC as ABB-ES' Program Manager for Brunswick, replacing Beth Walter. Mark Leipert is filling in for Jack Dunleavy (Northdiv) who is on temporary assignment at a Naval Air Station in the Philadelphia area.

II. STATUS AND SCHEDULE UPDATE

PROPOSED PLANS AND RODS - SITES 2, 7, AND 12

The Navy proposed following the recommendations of the 1990 Feasibility Study (FS), which recommends no further action or long term monitoring at Site 2 and no further action at Sites 7 and 12. The Navy distributed tables summarizing analyte concentration ranges and PRGs for various media at those sites. Several of the unit values in the tables appeared to be incorrect. The Navy will research and correct those values. In addition, results of seep and sediment samples taken at Site 2 in December 1994 had been previously faxed to the TRC members.

Site 2 - Orion Street Landfill South

In the discussion on Site 2, MEDEP asked about the latest sampling event (1989) and noted that there is not a well immediately downgradient at the toe of the landfill which would be useful in describing the source. The Navy agreed that an additional well location could be considered for the long term monitoring at Site 2.

In response to a question about State requirements for closure of the Site 2 landfill, the Navy noted that the calculated risks at Site 2 do not justify capping the landfill under CERCLA. If MEDEP requires additional work at Site 2, the funding would have to come from the Base's Pollution Abatement funds, and would be completely separate from DERA funding. MEDEP may not want to wait until the Site 2 Proposed Plan is submitted before informing the Navy that it has different requirements. MEDEP would treat the Site 2 landfill as an abandoned landfill. The Navy asked if the requirements would apply retroactively, since the landfill was closed out in the 1950s and has not been used since. MEDEP will look into this matter.

MEDEP noted that it does not allow results from filtered seep samples. MEDEP maintains that unfiltered samples are most conservative and representative of the groundwater conditions. It was decided that the Navy would create "basins" at long term monitoring seep sampling locations that would allow unfiltered sampling of seep water without disturbing sediments.

There was a discussion of biota monitoring of fish in Mere Brook to be performed by USFWS at the same time it is conducting a study at Picnic Pond. The Picnic Pond study will include evaluation of external conditions of the fish, toxicity test and species concentrations. If additional funding from USEPA can be made available, USFWS recommends a 10 fish sample from Mere Brook to study bioaccumulation of inorganics and PCBs. USFWS feels it is not necessary to take a control sample from an area upstream from Mere Brook or elsewhere because it already has lot of information for background and normal conditions, noting that Maine has a known problem with atmospheric deposition of mercury. USFWS said that it is important to know if fish are stocked in Mere Brook; if the

fish are newly stocked, they would not be suitable for the study. MEDEP said it would check on it. USFWS said the best time for the fish study would be midsummer because mercury methylation peaks at that time. In addition, USFWS recommended an additional location for sediment sampling between SW-121 and SW-122.

The Navy recommended coordinating any efforts MEDEP has planned for sampling at Mere Brook with USFWS. Previously planned MEDEP sampling had been postponed.

The BACSE's consultant expressed concern with 3 unidentified magnetic anomalies at Site 2 that did not correlate to debris on the surface. ABB-ES responded that magnetic anomalies would not be unexpected at an old landfill site.

The Navy would like to issue a Proposed Plan for Site 2 recommending long term monitoring. A Long Term Monitoring Plan would then be submitted, taking into consideration suggestions for additional sediment sampling and a downgradient well. The Navy would ideally like to have a ROD signed for Site 2 by September 30, 1995. The Navy recognizes that if elevated levels of mercury are found in the fish as a result of the fish study, the risk associated with the site could change although separating Site 2 impacts from Sites 1 and 3 will be virtually impossible. The Navy said that it is willing to take that risk. USFWS agreed that it would be a legitimate risk and suggested that if the mercury levels in the fish are borderline, the LTMP could be amended to include a fish study every 5 years to see if levels change.

The Navy noted that long term monitoring for Sites 1 and 3, Building 95 and the Eastern Plume should begin in February 1995 so there may be several rounds of monitoring at these sites before the monitoring at Site 2 can begin.

It was decided that a meeting would be held at 1:30 on January 25, 1995, to discuss the timing and funding of the fish study and the laboratory that would be used, and MEDEP's requirements for closure of Site 2.

Site 7 - Old Acid Caustic Pit

The Navy proposed no further action under CERCLA at Site 7 as recommended by the 1990 FS.

MEDEP expressed concern that, based on groundwater contouring, there appears to be only one monitoring well (MW-704) downgradient of the acid caustic pit. The BACSE Group's consultant noted that there were elevated levels of cadmium in two locations that exceeded the MCL, therefore, they could not recommend closing the books on Site 7. MEDEP agreed that there are still some concerns at Site 7. MEDEP wants to be sure that the groundwater contours are correct. It was noted that at the time of the Remedial Investigation, there were no explorations east of the road at Site 7.

It was agreed that water level measurements might clarify the direction of groundwater flow. The Base has the equipment and capability to perform the measurements but would not be able to plot the information.

In summary, MEDEP suggested that another downgradient monitoring well may be necessary. The Navy agreed to review the RI/FS data and decision making process to see if the data supports no further action Site 7, and will inform the TRC of its findings.

Site 12 - EOD Training Area

The Navy proposed no further action under CERCLA at Site 12 as recommended by the 1990 FS.

MEDEP inquired about the placement of the test pit locations at Site 12. The Navy said they were placed inside the bermed area which is where there would have been any detonations.

The BACSE Group's consultant raised the issue that a radiation survey had not been performed at the site. The Navy responded that if the Base closes and the land is turned over to the public a radiation survey could be performed at that time. If the Base goes on the Base Realignment and Closure List and a RAB is established, the public will have the opportunity to comment. It was noted that if the BACSE Group wants to get its concern into the public record, it could make the comment on the ROD and the Navy would respond.

The Navy asked for agreement on the no further action proposal at Site 12. There were no objections raised.

SITE 9 - NEPTUNE DRIVE DISPOSAL AREA

Because SVOCs are not a contaminant of concern at Site 9, it was agreed that existing wells will not be re-sampled for SVOCs as part of the Site 9 Source Investigation. One round of SVOC analyses would be performed in any new wells at Site 9. If SVOCs are found in the new wells, they can be added to the Site 9 long term monitoring program. SVOC analyses will be performed in the NEX wells because they have not been sampled previously for SVOCs.

Low-flow sampling techniques will be used for both the Site 9 Source Investigation and the long term monitoring. In addition, the Basewide LTMP (Building 95, Sites 1 and 3 and the Eastern Plume) will be amended to include low-flow sampling procedures. The Site 9 LTMP will be an addendum to the Basewide LTMP. The Navy hopes to be able to use dedicated sampling equipment for the long term monitoring program.

It was agreed that an additional monitoring well will be installed downgradient of the ash landfill next to MW-915 and will be screened just above the clay layer.

Both the Site 9 Source Investigation Sampling and Analysis Plan and the Site 9 LTMP will be released as final documents by January 27, 1995.

CONSTRUCTION UPDATE

Treatment Plant

The concrete for the treatment plant has been poured. The building is scheduled to arrive the week of January 16, and the equipment will be delivered the week of January 23, 1995. The startup of the treatment plant is on schedule for May 15. The water and sewer connections have been made. The extraction wells and piezometers have been installed and the pipelines to the wells are in place.

Sites 1 and 3 Landfill

The preparatory work has started. Fence and utility relocation has begun. Construction of the slurry wall that will surround the landfill is expected to begin in March, weather permitting.

NEX Gas Station

The NEX air sparging system is in operation. Another year of operation has been contracted with some modifications to upgrade from a pilot plant to a full scale operation.

Old Fuel Farm Remediation

In the western half of the fuel farm, tanks have been removed and wells have been drilled. Building construction to house the equipment for the vapor extraction system is scheduled for March 1995. In the eastern half, there are 2 remaining tanks. The new fuel farm is scheduled to be in operation by late February 1995. In April, the demolition of the old fuel farm will continue. The Base has begun conversations with MEDEP for long term monitoring of the site.

Site 11

The removal action conducted at Site 11 was completed on 12/9/94. The Navy is waiting for the waste characterization package. The laboratory data package is expected by the end of next week. The Removal Action Report is due in April 1995.

At the last technical meeting the Navy proposed removing Site 11 soils to below the burn layer and placing them under the landfill cap at Sites 1 and 3 for use as subgrade fill. The soils contain metal and concrete debris. Soil analyses already performed will tell if the soils are likely to pass TCLP. Clean soil would be brought in as fill to restore the original grade at Site 11. After some discussion, it was not clear if an Explanation of Significant Difference (ESD) for the Sites 1 and 3 ROD needs to be submitted. An ESD was necessary for Sites 5, 6, and 8 because the soils contained a hazardous or special waste. Based on the results of the soil analyses and compliance with Land Disposal Regulations, USEPA will determine if an ESD is necessary.

The Navy noted that timing is critical for getting the material under the cap. It was also noted that moving the soils to the landfill cap would not necessarily be the final remedial action at Site 11. After all the removal actions at Site 11 are complete, the Navy will revisit the Feasibility Study based on the current conditions at Site 11 to determine if any further remedial actions need to be taken.

Building 95

The excavation of contaminated soils at Building 95 was completed in December 1994. Soil samples analyzed on site confirmed that clean up levels had been reached and the site was backfilled. On-site laboratory results indicated concentrations about one order of magnitude below the PRG. A handout was distributed describing the equipment and procedures used in the field analysis. In addition, the contractor sent split samples to an off-site laboratory and the Navy is waiting for those results.

MEDEP has raised the concern that they were not given adequate time to review the results and had not been notified of backfilling. The Navy recognizes these concerns and will be addressing them in a letter to MEDEP.

The Navy and MEDEP discussed an additional well or substitution of one well for another for the long term monitoring of Building 95. MEDEP would like to see the soil results before the issue is resolved, therefore it was decided that the revision to the Basewide LTMP and the Site 9 LTMP should be issued on 1/27/95 as planned.

RELATIVE RISK EVALUATION

The Navy asked if there were any questions on what had been presented on the Relative Risk Evaluation process at the last technical meeting. USEPA noted that they will need to look at all the Navy bases to see how relative risk rankings will affect the region. MEDEP asked if the Navy would be conducting any presentations on the topic for MEDEP and USEPA. The Navy responded that there was nothing scheduled at the moment but Fred Evans said he would check on the possibility of a presentation.

RESTORATION ADVISORY BOARD (RAB)

The Base has a new Public Affairs Officer, John James, who is tasked with 1) updating the Base's Community Relations Plan and 2) establishing a RAB. The Department of Defense (DoD) is responsible for overseeing the establishment of RABs. Joint DoD and USEPA guidelines have been issued, however, it was noted that the Department of the Navy can choose to use the guidelines or develop its own. The Navy has issued its own guidance, dated 10/18/94. The Navy expects a RAB to be established at NAS Brunswick within 6 months or so. The TRC will continue to operate in its current capacity until then. At that time, the TRC may function as a technical subcommittee of the RAB.

MONTHLY OPERATIONS REPORT

The Base distributed the latest version of the Treatment Program Operations Report that will be sent to the Brunswick Sewer District on a monthly basis. The Base would like to have the same report distributed to everyone, therefore, the Base would like to know by mid-February if anything should be changed or added to the report. Analytical results will be attached to the report. These results will be separate from the quarterly long term monitoring results.

ISSUES/COMMENTS

The BACSE Group requested an update on actions that ABB-ES agreed to take in response to the "white out" incident when data was obscured one year ago. These actions included sign-off sheets, a training program, and a report or letter indicating when the training occurred. ABB-ES responded that technical review forms will accompany the final version of documents and the final documents will be stamped. ABB-ES has been working with MEDEP on an initiative to present ethics workshops for regulators, consultants, and clients held in 1994 and to be held in January, March and October of 1995. ABB-ES said they will provide the TRC with additional information on these followup actions.

The TRC members discussed the length and level of detail of meeting minutes. It was agreed that the minutes could summarize the issues discussed and decisions reached.

In response to a question about retaining multiple versions of IRP documents, the Navy said it will distribute copies of the Administrative Record Index to the TRC members so only the final versions can be kept if desired. If anyone should need to reference a draft version of a document, the Base will have them available.

The Site 2 visit was cancelled due to inclement weather.

IV. NEXT TRC MEETING

The next TRC meeting is scheduled for Wednesday, April 19, 1995 at 8:30 a.m. in Building 4 at NAS Brunswick. The next technical meeting is scheduled for March 8, 1995 at 10:00 a.m. in Building 8 at NAS Brunswick. A meeting to discuss the issue of the Mere Brook fish study and the closure of Site 2 will be held on Wednesday, January 25, 1995 at 1:30 p.m. in Building 8 at NAS Brunswick.

**NAS BRUNSWICK
INSTALLATION RESTORATION PROGRAM**

**SITE 2
ORION STREET LANDFILL - SOUTH
CONTAMINANTS OF CONCERN**

SURFACE SOILS

ANALYTE	MAXIMUM CONCENTRATION	PRELIMINARY REMEDIATION GOAL ¹	
DDT	0.023 mg/kg	130 mg/kg	ca
Aluminum	7,390 mg/kg	77,000 mg/kg	nc
Chromium	9.4 mg/kg	380 mg/kg	nc
Iron	8,350 mg/kg		
Lead	19.9 mg/kg	400 mg/kg	nc
Magnesium	1,840 mg/kg		
Manganese	98 mg/kg	380 mg/kg	nc
Mercury	0.65 mg/kg	20 mg/kg	nc
Vanadium	20 mg/kg	540 mg/kg	nc
Zinc	25 mg/kg	23,000 mg/kg	nc

GROUND WATER

ANALYTE	MAXIMUM CONCENTRATION	PRELIMINARY REMEDATION GOAL ¹	
Aluminum	5,200 µg/L	1,800 µg/L	nc
Arsenic	15J µg/L	3.8 µg/L	ca
Chromium	12 µg/L	180 µg/L	nc
Iron	14,000 µg/L		
Lead	180 µg/L	4.0 µg/L	nc
Zinc	82JB µg/L	11,000 µg/L	nc

SITE 2
CONTAMINANTS OF CONCERN cont'd
PAGE 2 of 3

SURFACE WATER

ANALYTE	MAXIMUM CONCENTRATION ($\mu\text{g/L}$)	AWQC ($\mu\text{g/L}$)			
		HUMAN HEALTH		FRESH WATER AQUATIC LIFE	
		WATER AND FISH CONSUMPTION	FISH ONLY	ACUTE	CHRONIC
Calcium	7,380				
Iron	4,950	300			1000
Lead	8.3J	50		83 ²	3.2 ²
Manganese	180	50			
Potassium	5420				
Sodium	6710				
Zinc	173			120 ²	110 ²

SEEPS

ANALYTE	MAXIMUM CONCENTRATION ($\mu\text{g/L}$)	AWQC ($\mu\text{g/L}$)				NOAA SEDIMENT SCREENING VALUES ER-L
		HUMAN HEALTH		FRESH WATER AQUATIC LIFE		
		WATER AND FISH	FISH ONLY	ACUTE	CHRONIC	
Acetone	28					
Toluene	20	14,300	424,000	17,400 ⁴		
Xylenes	15					
DDT	0.22	.000024	.000024	1.1	.001	2 ppb
DDE	0.3			0.001		2 ppb

SITE 2
CONTAMINANTS OF CONCERN cont'd
PAGE 3 of 3

LEACHATE AND SEDIMENT WATER

ANALYTE	MAXIMUM CONCENTRATION (µg/L)	AWQC (µg/L)				NOAA SEDIMENT SCREENING VALUES (ER-L)
		HUMAN HEALTH		FRESH WATER AQUATIC LIFE		
		WATER AND FISH	FISH ONLY	ACUTE	CHRONIC	
Aluminum	651,000					
Calcium	78,000					
Magnesium	45,500					
Iron	766,000	300			1,000	
Arsenic	51	0.018	0.14	360	190	
Chromium (III/VI)	1,190 (total)	170,000	3,433,000	1,700/16	210/11	
Copper	914			18 ³	12 ³	
Cobalt	675					
Mercury	18	0.144	0.146	2.4	0.012	
Zinc	2,770			120 ³	110 ³	

Notes:

- The soil and water concentration standards were taken from the EPA Region IX compilation of Preliminary Remediation goals (PRGs) dated 8/1/94. Residential concentrations are used for the soil PRGs. The cancer based PRGs have been modified to reflect a 1 in 10,000 risk of increased cancer. The following notation has been used in the tables:

ca standard based on cancer risk
nc standard based on risk factors
sat standard set at soil saturation value (volatiles)
max standard set at 100,000 mg/kg for soils (nonvolatiles)

These standards are based upon the most current EPA information as contained in IRIS and HEAST. For additional information see "Region IX Preliminary Remediation Goals (PRGs), Second Half 1994", published on August 1, 1994.

- Insufficient data to develop Aquatic Water Quality Criteria. Value presented is the lowest Observed Effects level (LOEL).
- Hardness dependent criteria (100 mg/L CaCO_3 used)
- Insufficient data to develop AWQC. Value presented is the Lowest Observed Effects Level (LOEL)

**NAS BRUNSWICK
INSTALLATION RESTORATION PROGRAM**

**SITE 7
OLD ACID CAUSTIC PIT
CONTAMINANTS OF CONCERN**

SURFACE SOILS

ANALYTE	MAXIMUM CONCENTRATION	PRELIMINARY REMEDIATION GOAL ¹	
Ancenaphthene	660 µg/kg	360 mg/kg	sat
Flourene	450 µg/kg	300 mg/kg	sat
Toluene	1,900J µg/kg	870 mg/kg	nc
Mercury	0.46 mg/kg	20 mg/kg	nc
Bis(2-Ethylhexyl)Phthalate	14,000BD µg/kg	3,200 mg/kg	ca
Total PAHs	21,500 µg/kg		
4,4-DDE	160 µg/kg	130 mg/kg	ca
4,4-DDD	26 µg/kg	190 mg/kg	ca
4,4-DDT	340 µg/kg	130 mg/kg	ca
Arsenic	34J mg/kg	22/32 mg/kg	nc/ca
Barium	1,300JD mg/kg	5,300 mg/kg	nc
Chromium	50J mg/kg	380 mg/kg	nc
Iron	53,000 mg/kg		
Lead	340 mg/kg	400 mg/kg	nc
Magnesium	10,000 mg/kg		
Manganese	1,000 mg/kg	380 mg/kg	nc
Zinc	216 mg/kg	23,000 mg/kg	nc

GROUND WATER

ANALYTE	MAXIMUM CONCENTRATION	PRELIMINARY REMEDATION GOAL ¹	
Aluminum	417 µg/L	37,000 µg/L	nc
Cadmium	15 µg/L	18 µg/L	nc
Calcium	17,000J µg/L		
Iron	9,700J µg/L		
Manganese	950J µg/L	180 µg/L	nc
Potassium	8,400 µg/L		
Sodium	13,000J µg/L		
Zinc	39 µg/L	11,000 µg/L	nc

SITE 7
CONTAMINANTS OF CONCERN cont'd
PAGE 2 OF 2

Notes:

1. The soil and water concentration standards were taken from the EPA Region IX compilation of Preliminary Remediation goals (PRGs) dated 8/1/94. Residential concentrations are used for the soil PRGs. The cancer based PRGs have been modified to reflect a 1 in 10,000 risk of increased cancer. The following notation has been used in the tables:

ca	standard based on cancer risk
nc	standard based on risk factors
sat	standard set at soil saturation value (volatiles)
max	standard set at 100,000 mg/kg for soils (nonvolatiles)

These standards are based upon the most current EPA information as contained in IRIS and HEAST. For additional information see "Region IX Preliminary Remediation Goals (PRGs), Second Half 1994", published on August 1, 1994.

**NAS BRUNSWICK
INSTALLATION RESTORATION PROGRAM**

**SITE 12
EXPLOSIVE ORDNANCE DUMP TRAINING AREA
CONTAMINANTS OF CONCERN**

SOILS

ANALYTE	MAXIMUM CONCENTRATION	BACKGROUND		PRELIMINARY REMEDIATION GOAL ¹	
		LINDSEY 1979	SITE SPECIFIC		
Chromium	62 mg/kg	54 mg/kg	42 mg/kg	380 mg/kg	nc
Lead	47 mg/kg	19 mg/kg	9 mg/kg	400 mg/kg	nc
Nitrate/Nitrite	2 mg/kg			100,000/ 6,500 mg/kg	max/nc
Phosphorous	530 mg/kg	430 mg/kg			

Notes:

- The soil and water concentration standards were taken from the EPA Region IX compilation of Preliminary Remediation goals (PRGs) dated 8/1/94. Residential concentrations are used for the soil PRGs. The cancer based PRGs have been modified to reflect a 1 in 10,000 risk of increased cancer. The following notation has been used in the tables:

ca	standard based on cancer risk
nc	standard based on risk factors
sat	standard set at soil saturation value (volatiles)
max	standard set at 100,000 mg/kg for soils (nonvolatiles)

These standards are based upon the most current EPA information as contained in IRIS and HEAST. For additional information see "Region IX Preliminary Remediation Goals (PRGs), Second Half 1994", published on August 1, 1994.

Field Analysis of 4,4'-DDT at Building 95, NAS Brunswick

Field Analysis. Field analysis was performed for 4,4'-DDT on December 6 and 7, 1994. Twenty-one soil samples and three duplicates were analyzed using Gas Chromatography (GC) analysis. Soil samples were prepared using a micro-extraction technique followed by USEPA SW-846 modified Method 8080. Total solids analysis was also performed on all samples and results are reported on a dry weight basis. The reporting limit for these analysis is 0.5 mg/kg (ppm).

Gas Chromatograph. A Hewlett Packard 5890 Series II temperature programmable GC was used for analysis. The GC was equipped with a Ni⁶³ detector and connected to a HP3365 Chem Station for data collection and processing. A SP-608, 0.53 mm ID megabore column was used for compound separation and identification.

Sample Preparation. A micro-extraction technique was used to prepare the soil samples for analysis. Two grams ($2\text{ g} \pm 0.2\text{ g}$) of soil were weighed into a screw top test tube and then a surrogate (TCMX, final concentration $0.25\text{ ng}/\mu\text{L}$) was added. Approximately 2 mL of pesticide grade methanol was added to the samples. The test tube was capped and shaken vigorously for 30 to 60 seconds. The cap was removed and 2.0 mL of resi-grade hexane was added to the sample. The sample was vortexed vigorously for 1 to 3 minutes to extract the sample. The sample was centrifuged to separate the hexane phase (the hexane layer separates to the top). The hexane extract was placed in an auto sampler vial and analyzed on the GC.

Calibration. Quantitation for DDT analysis was performed using an external calibration technique. A minimum of three calibration levels were used within the linear range of the detector. DDT was identified by matching the retention time of DDT in the samples to the standards.

Continuing Calibration. Prior to daily sample analysis and at the end of the analytical sequence, a continuing calibration check standard was analyzed at the mid-level of the calibration curve. A percent difference of less than 20 percent was compared to the initial calibration to confirm that the system was still in control. A percent difference of greater than 20 percent would have required recalibration prior to analysis. Actual percent differences were 9.8 percent for the opening standard and 8.1% for the closing standard.

Method Blanks. Soil extraction method blanks were prepared with each sample extraction group and analyzed prior to sample analysis to confirm that no DDT was present in the extraction solvents, methanol and hexane, and associated glassware. No DDT was detected in the associated method blank.

Surrogate Recoveries. 2,4,5,6-Tetrachloro-meta-xylene (TCMX) was used as the surrogate and added to all soil samples prior to analysis. Soil advisory criteria for surrogate recovery ranged from 30 % recovery to 200 % recovery. All samples were well within this range except when sample extracts were diluted and reanalyzed, i.e., the surrogate was diluted to below the detection limit and not calculated. Surrogate recoveries ranged from 107 % to 132 % with an average recovery of 118 %.

Duplicates. Three sets of sample duplicates were collected and analyzed. Precision could not be calculated for these samples since all results were below the reporting limit of 0.5 mg/kg (ppm).

Matrix Spikes and Matrix Spike Duplicates. Two sets of matrix spike and matrix spike duplicates were analyzed. One set was not calculated because the results exceeded the calibration range. The second set of spiked samples had recoveries of 96 % and 152 % with an RPD of 45 %.

ANALYTICAL RESULTS

Sample Identification	mg/kg dry weight (ppm)
ABB01	28
ABB02	< 5.3
ABB03	< 0.54
ABB03 DUP	< 0.54
ABB04	< 0.55
ABB05	< 0.66
ABB06	< 0.50
ABB07	< 0.64
ABB08	< 5.9
ABB09	< 0.66
ABB10	< 6.6
ABB11	< 0.64
ABB12	23
ABB13	< 0.66
ABB13 DUP	< 0.64
ABB14	< 0.67
ABB15	< 0.64
ABB16	52
ABB17	300
ABB18	6.1
ABB19	< 0.69
ABB20	< 0.67
ABB21	< 0.68
ABB21 DUP	< 0.69

Supplemental Field Analysis of 4,4'-DDT at Building 95, NAS Brunswick

Field Analysis. Supplemental field analyses were performed for 4,4'-DDT on December 14, 15, and 16, 1994. Five soil samples and one duplicate were analyzed using Gas Chromatography (GC) analysis.

Calibration. Prior to daily sample analysis a calibration curve was generated on both the 14th and 16th of December.

Method Blanks. Soil extraction method blanks were prepared with each sample extraction group and analyzed prior to sample analysis to confirm that no DDT was present in the extraction solvents, methanol and hexane, and associated glassware. No DDT was detected in the associated method blanks.

Surrogate Recoveries. 2,4,5,6-Tetrachloro-meta-xylene (TCMX) was used as the surrogate and added to all soil samples prior to analysis. Soil advisory criteria for surrogate recovery ranged from 30 % recovery to 200 % recovery. Only one sample, ABB22 had a surrogate recovery that could be calculated the remaining samples were diluted, i.e., the surrogate was diluted to below the detection limit and not calculated. The surrogate recovery was 105 % for ABB22.

Duplicates. One set of sample duplicates were collected and analyzed. ABB23 and ABB DUP. with results of 510 mg/kg and 590 mg/kg respectively. The relative percent difference (RPD) for the duplicate pair was 15 % indicating good precision.

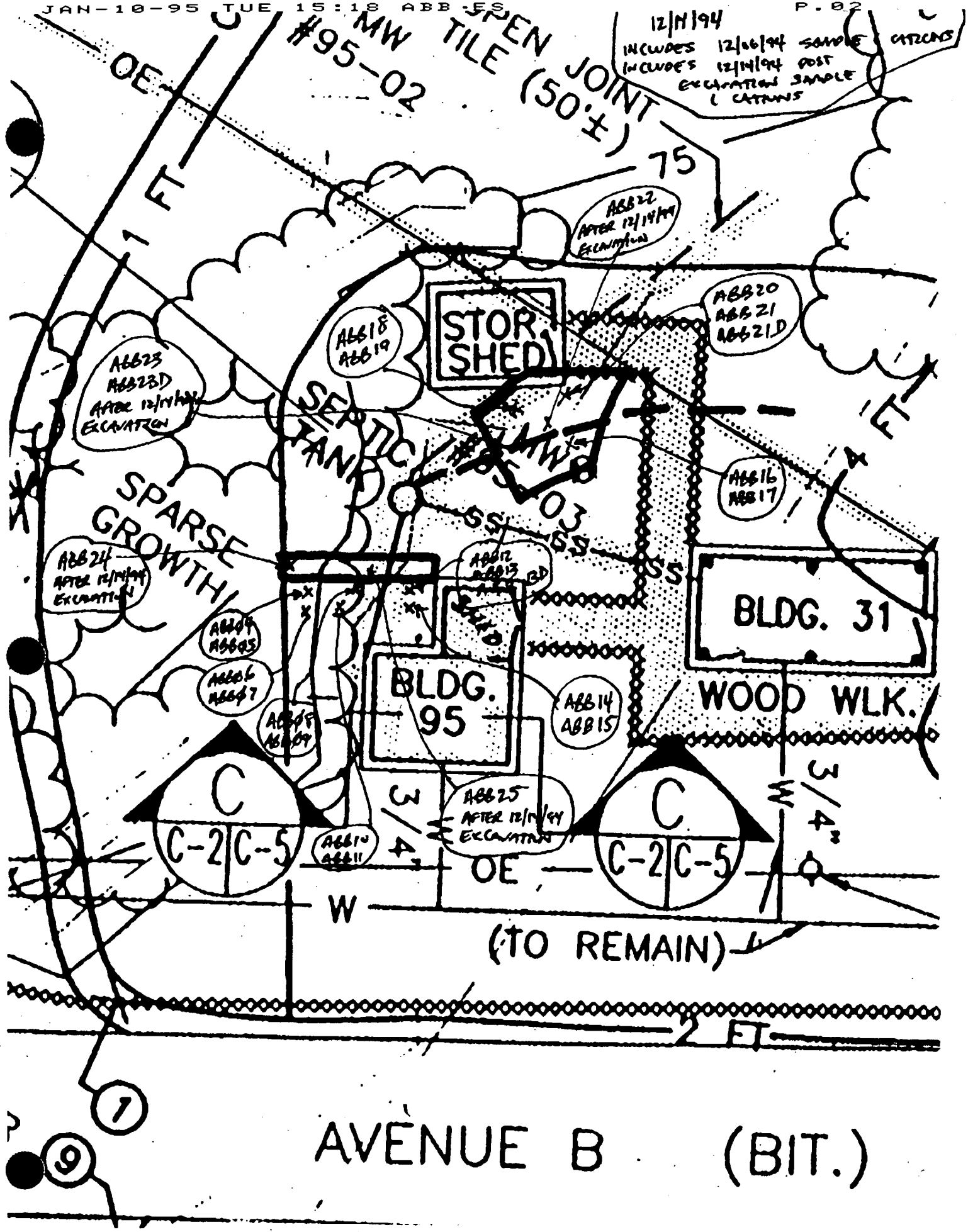
Matrix Spikes and Matrix Spike Duplicates. One matrix spike and matrix spike duplicate were analyzed. The set of spiked samples had recoveries of 113 % and 126 % with an RPD of 11 %.

SUPPLEMENTAL ANALYTICAL RESULTS

Sample Identification	mg/kg dry weight (ppm)
ABB22	< 0.65
ABB23	510
ABB23 DUP	590
ABB24	8.5
ABB25	38
ABB26	14

#95-MW TILE OPEN JOINT
(50'±)

12/11/94
INCLUDES 12/06/94 SAMPLE
INCLUDES 12/11/94 POST
EXCAVATION SAMPLE
(CATRANS)



(TO REMAIN)

AVENUE B (BIT.)

#95-02 MW TILE (50'±)

12/14/94

INCLUDES LOCATION OF
SAMPLE COLLECTED
AFTER EXCAVATION

OE
1 FT

75

4 FT

STOR
SHED

SEPTIC
TANK

SPARSE
GROWTH

Abb 26

SS 503
3' W ABOT

BLDG.
95

BLDG. 31

WOOD WLK.

C
C-2 | C-5

3/4" W

OE

C
C-2 | C-5

W 1/4"

(TO REMAIN)

2 FT

AVENUE B (BIT.)

1

9

PRE OCTOBER

MW TILE JOINT
#95-02 (50'±)

OE
1 FT

75

2'±

4 FT

STOR
SHED

3 FT

SPARSE
GROWTH

SEPTIC
TANK

#95 MW

#95-03

BLDG.
95

BLDG. 31

WOOD WLK.

C
C-2 | C-5

3/4" W

OE

C
C-2 | C-5

3/4" W

W

(TO REMAIN)

2 FT

AVENUE B (BIT.)

7

9

12:41 ABB:ES
#95-02 MW TILE (50'±)

10/17/94

10/17/44
1' ADD '12
CUT

**STOR
SHED**

SPARSE
GROWTH

BLDG.
- 95 -

BLDG. 31

WOOD WLK.

C

C-2 | C-5

3/1

OE

0

C-2 | C-5

3/4

(TO REMAIN)

5

AVENUE B (BIT.)

①

⑨

#95-02 MW TILE (50'±)

10/18/94

10/10/94

2' ~~100~~ ~~2~~ CUF

STOR SHED

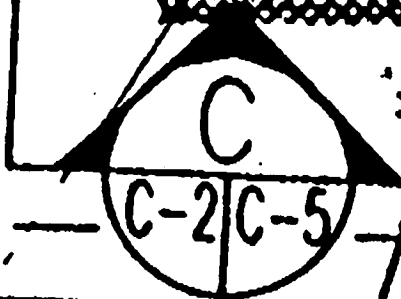
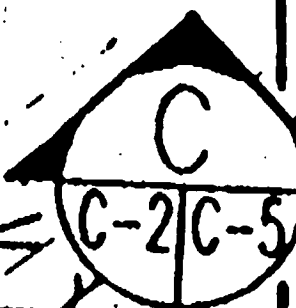
SEPTIC TANK

SPARSE GROWTH

BLDG. 95

BLDG. 31

WOOD WLK.



OE

W

W 3/4"

(TO REMAIN)

2 FT

AVENUE B (BIT.)

7
9

12/14/94

#95-02 MW TILE JOINT (50'±)

